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FEED STUFF ANALYSES

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ADDRESS

Chemical Department, Maryland Agricultural College

COLLEGE PARK, MD.

ANALYSES OF

Feeds Sold in Maryland

BY THE CHEMICAL DEPARTMENT OF

The Maryland Agricultural College

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This bulletin contains the results of analysis of samples feeding stuffs obtained during the year 1914. The work has been mostly limited to "concentrated feeding stuffs," as defined in the feed law. The examination of wheat bran, middlings, corn meal and similar feeds has been limited, as a rule, to a microscopic examination for adulerants and have been found practically free from adulteration and are not listed herein.

The feeds herein are, as a rule, by-products from some industry, as the manufacture of oils, alcohol, whiskey, beer, breakfast foods, etc., or mixtures of several of them with some refuse molasses. The latter has feeding value, is liked by the animal and prevents the separation of fine and heavy ingredients from the lighter bulky material of the mixture.

FEED ANALYSIS.

A complete analysis of a feed separates it into its constitutional parts, or groups of constituents having similar properties. The usual constituents are water, ash, protein, fat, fiber and nitrogen-free extract.

WATER is present in all feeds and is an important article of commerce in this way. Old grain, called "dry," will contain about 10 percent, while new grain will contain more. If the amount is over 14 or 15 percent the grain or feed is very liable to mold and ferment. Fresh fruits and vegetables, as cabbage, turnips, etc., frequently contain over 90 percent of water. The water content of feed will change on storage, the amount of change depending on the condition at the start, method of storing, temperature and

humidity of the air, etc. If the feed has been kiln-dried, as with dried brewer's or distiller's grains, molasses feed, etc., gain in weight is common. This would be indicated if the packages weigh more than the guaranteed weight and, in that case, a corresponding decrease in the percent of the other constituents should be expected. On the other hand, should the material lose moisture, a corresponding increase in the percent of the other constituents (but not in the actual amount) occurs.

The changes in moisture content are very important in connection with sampling and analysis and the proper care of samples for analysis—points which are liable to be entirely overlooked by those who have not been instructed in such matters.

ASH, as its name indicates, is the part of the feed which remains after burning. It is the mineral part, which has its origin in the minerals of the earth (soil). All other parts of the feed have their origin, either directly or indirectly, from the air.

PROTEIN, or crude protein, is the nitrogenous part, calculated from the nitrogen by multiplying it by 6.25. It includes albumens and other nitrogenous bodies not so valuable as food. Protein is essential for the formation of flesh, nerves, hair, feathers, etc., in fact nearly all tissues of the animal body, except fat, and it may serve to form fat.

FAT, or "crude fat," is the ether extract obtained by treating the dry substance with ether. In the case of grains, seeds, nuts and flesh it is nearly pure fat and oil, but with hay, grasses and coarse fodders it contains considerable amounts of wax, gum, etc. It is often a valuable constituent of feed, is the most concentrated form of energy, and serves to build fat in the animal when in excess of its immediate requirements. Large amounts of fat are not tolerated by farm animals, as a rule.

FIBER, or "crude fiber," is the fibrous, woody part, not soluble in ether, dilute acid or alkali. It is largely indigestible, but serves to give the ration proper bulk. The digestibility varies with the nature of the fiber and the kind of animal. The amount of fiber is small in flesh, cereal grains and nuts, but large in stems, stalks, hays, straws, fodders, husks, hulls, cobs, etc., and its amount, as shown by analysis, indicates the presence of such materials.

NITROGEN-FREE EXTRACT, sometimes called "carbohydrates," or "soluble carbohydrates" (thereby excluding the fiber, which is an insoluble carbohydrate), is obtained by finding the amounts of the constituents enumerated above and substracting this sum from 100 percent. It includes starch, sugars, pentosans, etc., which may be determined separately.

For inspection purposes it is generally sufficient to determine the amount of protein, fat and fiber, as this will indicate if the feed has been adulterated with inferior coarse material, such as hulls, straws, cobs, etc., as such substances are low in protein and fat but high in fiber.

A table of well-known and standard feed materials with several coarse materials is given on page 12, showing the approximate average composition for comparison with the feeds shown on the market as indicated in the following table. (Pages 4-11.) **The analyses are given in percentage, or pounds in a hundred.**

ANALYSIS OF FEEDING STUFFS.

No.	Name of Manufacturer or Agent.	Name of Feeding Stuffs.	Place of Sampling.	Protein.		Fat or Ether Extract.		Crude Fiber.	
				Found.	Guaranteed.	Found.	Guaranteed.	Found.	Guaranteed.
29073	American Agrl. Chem. Co., New York, N. Y.	Beef Scrap for Poultry.	Ellicott City...	57.65	55.00	10.80	10.00	.80	3.00
29045	Adamstown Canning & Supply Co., Adamstown, Md.	Ground Oats*.....	Barnesville...	5.13		1.96		28.29	
29048	" " " "	Reground Oat Feed*....	Barnesville...	5 44		1.85		28.30	
29014	Ajax Milling & Feed Co., New York N. Y.	Ajax Flakes.....	Baltimore.....	30.19	30.00	12.57	11.00	10.68	14.00
29028	American Cotton Seed Oil Co., Memphis, Tenn.	Cotton Seed Meal.....	Frederick.....	37.91	36.55	8 27	7.00	9.50	11 50
29029	American Linseed Co. New York, N. Y.	Old Process Oil Meal...	Hagerstown..	33.78	34.00	5.75	5.00	8.25	8.00
24835	American Maize Products Co., New York, N. Y.	Gream of Corn Gluten Feed.....	Upperco.....	23.96	22.00	2.52	2.50	6.66	8.50
29030	American Milling Co., Peoria, Ill.	Amco Old Process Linseed Meal.....	Hagerstown ..	31.94	32 00	7 02	6.00	9.46	11.00
29066	" " "	Mixing Feed.....	Elkton	13.16	12 00	6 23	2 50	12.09	12.00
24814	" " "	Sucrene Dairy Feed....	Gaithersburg	15.88	16.50	5.75	3.50	10.13	12.00
24830	" " "	Sucrene Alfalfa Horse & Mule Feed...	Laurel	10.79	11.00	3.65	2 50	11.60	12.00
29046	" " "	Sucrene Scratch Feed..	Germantown ..	10.27	10.00	3.49	2.50	2.57	5.00
29051	Angelo Meyers Co., Linfield, Pa.	Linfield Feed.....	Price Sta.....	15.53	13.84	5.96	5.30	12.42	18.20
29031	Archer Daniels Linseed Co., Minneapolis, Minn.	Ground Oil Cake.....	Frederick	35.45	32.00	7.29	6.00	7.10	10.00
24808	Atlantic Export Co., Chicago, Ill.	Dried Brewers Grains..	Baltimore	23.78	28.00	8.16	6 00	13.05	12.00
29061	F. Bauernschmidt, Baltimore, Md.	Dried Brewers Grains..	Cardiff.....	26.59	26.00	6.69	5.00	14.02	

*See note bottom page 11.

29055	Baugh & Sons Co., Baltimore, Md.	Meat Meal	Middleburg	55.19	50.55	13.73	14.18	1.00	
29041	" " " "	Special Ground Bone for Poultry	Hancock	26.41	27.00	1.49	3.00	1.62	
29018	Berg Co., Philadelphia, Pa.	Three Medal Poultry Meat	Baltimore	42.91	40.00	11.83	11.00	.92	1.00
24826	Blatchford Calf Meal Factory Waukegan, Ill.	Calf Meal	Laurel	25.45	24.00	5.17	5.00	5.13	5.00
29080	" " " "	Milk Mash	Baltimore	18.52	20.00	4.65	4.00	4.45	7.50
24833	J. Bolgiano & Son, Baltimore, Md.	Square Deal Beef Scraps	Baltimore	49 75	50.00	3.43	10.00	1.15	1.00
29004	" " " "	Square Deal Chick Feed	Baltimore	9.92	10.01	2 57	3.89	3.00	2.76
24850	" " " "	Square Deal Chick Starter	Baltimore	10 53	10.50	3.59	3.57	2.68	2.70
24846	" " " "	Square Deal Pigeon Food	Baltimore	13.16	12.55	4.02	3.47	3.05	2.76
29005	" " " "	Square Deal Poultry Food	Baltimore	10.35	11.50	2.98	3.87	2.50	2.76
29017	" " " "	Square Deal Poultry Mash	Baltimore	14.48		5.28		6.76	
24815	F. W. Brode & Co., Memphis, Tenn.	Owl Brand H. G. Cotton Seed Meal	Rockville	41.68	41.00	7.90	6.00	7.60	10.00
24816	Buckeye Cotton Oil Co., Cincinnati, Ohio	Prime Cotton Seed Meal	Washington Gr	37.29	38.62	6.83	6.00	11.78	12.00
29093	Burke County Oil & Fert. Co., Waynesboro, Ga.	Standard Grade Cotton Seed Meal	Baltimore	37.21		8 85		10.82	
29022	Canton Distilleries Co., Baltimore, Md.	Muller Dried Rye Grains	Baltimore	16.02	16.00	7.53	6.00	14.49	17.00
29062	Chapin & Co., Hammond, Ind.	Centaur Stock Food	Bel Air	17.81	16.00	6.90	6.00	8.17	8.00
29063	" " "	Hominy Meal	Perryman	14 48	10 00	7.53	7.00	4.27	5.00
24817	" " "	Unicorn Dairy Ration	Rockville	27.03	26 00	6.57	5.50	9.65	10.00
29064	Clover Leaf Milling Co., Buffalo, N. Y.	Calf Meal	Bel Air	25 10	25.00	5.28	7 00	5.60	7.00
24813	" " " "	Dairy Feed	Sparks	16.41	16.50	4.65	3.50	10.76	12.00
24819	" " " "	Dairy Feed	Rockville	15.80	16.50	4.34	3.50	10.58	12.00
29079	" " " "	Peerless Dairy Ration Feed	White Hall	20.01	21.00	6.35	4.00	11.95	10.00

ANALYSIS OF FEEDING STUFFS.

No.	Name of Manufacturer or Agent.	Name of Feeding Stuffs.	Place of Sampling.	Protein.		Fat or Ether Extract.		Crude Fiber.	
				Fouud.	Guaranteed.	Fouud.	Guaranteed.	Found.	Guaranteed.
29032	Corby Co., Wash ngton, D. C.	Dried Grains.....	Frederick	17.81	17 00	8.64	8.00	17.69	20.00
29065	Corn Products Refining Co., New York, N. Y.	Buffalo Corn Gluten Feed.	Perryman....	28 61	23.00	2.75	2.00	6.72	8 50
29015	" " " "	Diamond Corn Gluten Meal.	Baltimore.....	42 21	40.00	2.68	1.50	1.50	4.00
29033	" " " "	Diamond Hog Meal....	Hagerstown...	20 01	18.00	9.50	8.00	10.57	13.00
29069	Cyphers Incubator Co., Buffalo N. Y.	Developing Food	Baltimore.....	11.50	10.00	3.05	3.00	1.98	3.20
24827	Albert Dickinson Co., Chicago, Ill.	Queen Poultry Mash....	Berwyn.....	10.88	11.00	3.11	2.00	4.63	10.00
29096	Douglass & Co., Cedar Rapids Iowa	Corn Gluten Feed.....	Baltimore.....	24.75	23.00	2.98	2.00	5.82	8.00
24753	" " " " "	Douglass Gluten Feed*.	St. Michaels...	22.73	20 00	3.02	2.00	6.00	8.00
29034	Edwards & Loomis Co., Chicago. Ill.	Red Comb Poultry Feed	Hagerstown...	11.14	10.00	3.13	2.50	2.72	5.00
29056	John F. Eby & Son, Lancaster Pa.	Crystaloid Dairy Feed	Lineboro	17.20	18.50	6.25	3.50	13.00	12 00
29101	H. D. Eidman & Bro., Baltimore, Md.	Cotton Seed Meal.....	Laurel	39.75		10.53		7.32	
24828	Jno. W. Eshelman, Lancaster, Pa.	Ground Beef Scrap for Poultry	Mt. Rainier....	46.95	50 00	13.70	10.00	.64	1 00
29097	" " " "	Poultry Mash	Baltimore.....	19.92	18.00	5.60	5.00	4.65	6.00
24849	Farmers Feed Co., Buffalo, N Y.	Bull Brand Dried Brewers Grains	Baltimore.....	27.09	27.20	6.58	6.30	11 57	16.17
24804	Farmers & Planters Co. Salisbury, Md.	Stock Feed.....	Salisbury.....	10.27		2.45		4.72	
29086	J. M. Frisch & Co., Baltimore, Md.	Dried Brewers Grains..	Baltimore.....	29.31	25.00	6.25	6.00	12.65	13.00
24841	" "	Prime Cotton Seed Meal	Baltimore....	37.47	38.50	8.15	6.00	11.20	9.00

24832	" "	Pure Old Process Oil Meal	Hydes	32.43	30.00	6.39	5.00	6.97	5.00
29070	C. A Gambril Mfg. Co., Baltimore, Md.	Patapsco Horse Feed.	Sharptown	10 27	11.75	4.78	4.60	4.62	5.70
29094	Golden Grain Milling Co., East St. Louis, Ill.	Puritan Horse & Mule Feed.	Baltimore	11.03	9.00	3.75	1.50	14.12	12.00
29071	Grain Milling Co., Columbus, Ohio.	Horse & Mule Feed.	Fruitland	9.92	10.00	4.95	4.00	3.47	9.00
29075	Harter Milling Co., Toledo Ohio.	Corn & Oats Chop	Aiken	10.97	10.00	5 28	4.00	5.15	9.00
29008	Hen-E-Ta Bone Co., Blairsville, Pa.	Hen-O-La Dry Mash	Pocomoke City	12.37	12.00	2.95	2.00	5.22	3.00
24820	H-O Co., Buffalo, N. Y.	De-Fi-Feed	Silver Springs.	8.69	8.00	3.67	3.00	13.72	21.00
29011	International Sugar Feed Co. Minneapolis, Minn.	Dan Patch Feed	Baltimore	12.52	12.50	3.53	3.50	12.35	12.00
29012	" "	Special Dairy Feed	Baltimore	14.92	1 .00	6.52	3 50	12.10	12 00
24807	Imperial Cotto Milling Co., Memphis, Tenn.	Cotton Seed Meal	Bel Air	40.72	41.00	8.06	7.00	7.92	12.00
29047	Chas. A. Krause Milling Co., Milwaukee Wis.	Badger Dairy Feed	Derwood	16 03	16.00	6 03	2.00	12.50	15.00
24814	Larrowe Milling Co., Detroit, Mich,	Dried Beet Pulp	Baltimore	7.90	8.00	.78	.50	19.55	20.00
24842	" " " "	Larro Feed for Dairy Cows	Baltimore	19.13	19.00	3.95	3.00	13.50	14.00
29025	D. B. Martin Co., Philadelphia, Pa.	Beef Scrap	Baltimore	46.60	50.00	18.28	10.00	80	2.00
24831	" " " "	Chicken Meat	Laurel	62.53	50.00	12.20	10 00	.69	2 00
29049	W. J. Massey, Price Sta., Md.	Unique Cow Feed	Price Sta	14.92	15.25	5.36	5 25	5.12	6 00
29010	Milwaukee Grain Feed Co., Milwaukee, Wis.	Crown Brewers' Grains.	Baltimore	29.31	25 00	6.60	5.00	13.03	15.00
24836	Monticello Distilling Co., Balto , Md.	Muller Dried Rye Grains	Sparks	15.36	16.00	7.73	12.00	12.95	14.00
29077	Monumental Brewing Co., Baltimore, Md.	Brewers Grains	Baltimore	24.04		6.77		14.79	
29083	" " "	Dried Brewers Grains	Woodbine	27.29		7.49		14.42	
29020	Joel Moores & Co., Baltimore, Md.	Ground Beef Cracklings for Poultry Food	Baltimore	60.64	50.00	11.15	12.00	.87	

*"Republished from Bulletin No. 62 to correct error in name. It was formerly published as 'Buffalo Gluten Feed,' which is a brand name used by the Corn Products Refining Co. The error was made by the farmer who sent the sample for analysis."

No.	Name of Manufacturer or Agent.	Name of Feeding Stuffs.	Place of Sampling.	Protein.		Fat or Ether Extract.		Crude Fiber.	
				Found.	Guaranteed.	Found.	Guaranteed.	Found.	Guaranteed.
29035	Nelson Shearhod Co., Little Rock, Ark.	Cotton Seed Meal.....	Frederick	42.03	38.00	8.15	5.00	9.07	10.00
24821	Ninety Six Oil Mill, Ninety Six, S. C.	Standard Cotton Seed Meal.....	Silver Springs .	38.17	38.62	6.78	6.00	9.98	10.00
29036	North-West Mills Co., Winona, Minn.	Sugarota Calf Meal.....	Walkersville...	23.43	25.00	6.10	6.00	5.02	6.00
24822	" " "	Sugarota Dairy Feed ...	WashingtonGr.	16.15	16.50	5.25	3.50	11.05	12.00
24810	New Oxford Pure Feed Co., New Oxford, Pa.	Ox-O Pure CaneMol. Concentrated Dairy Feed.	Frederick.....	27.55	28.00	4.94	5.50	9.32	8.00
24811	" " " " "	Ox-O Pure Cane Mol. Dairy Feed No. 1.....	Frederick.....	24.13	25.00	5.85	4.50	10.45	9.00
24812	" " " " "	Ox-O Pure Cane Mol. Dairy Feed No 2.....	Frederick.....	20.36	19.00	6.15	3.50	13.75	11.00
29084	Omaha Alfalfa Milling Co., Omaha, Neb.	Green Meadow Dairy Feed	Baltimore	11.41	11.00	1.50	1.00	15.77	25.00
24829	" " " "	Perfection Horse Feed..	Hyattsville....	11.67	10.00	3.03	2.00	9.95	12.00
29013	G. Ober & Sons Co., Baltimore, Md.	Royal Crown Beef Meat for Poultry.....	Baltimore	60.11	50.00	13.43	12.00	.80	1.00
29016	Patapsco Guano Co., Baltimore, Md.	Beef Scrap for Poultry	Baltimore	61.16	55.00	11.95	10.00	.65	3.00
24823	Park & Pollard Co., Boston, Mass.	Dry Mash.....	Silver Springs.	19.37	18.00	3.80	3.50	8.05	12.00
29074	" " " "	Growing Feed.....	Baltimore	15.18	10.00	4.27	3.50	4.32	8.00
29078	" " " "	Growing Feed.....	Baltimore	13.43	10.00	3.58	3.50	3 74	8.00
24802	G. E. Patterson & Co., Memphis, Tenn.	Crown Horse Feed.....	Baltimore	9.69	9.00	2.83	2.00	10.37	12.00
29001	" " " " "	Katleat Dairy Feed.....	Baltimore	16 58	15.00	4.58	3.00	10.57	12.00
29072	M. C. Peters Mill Co., Omaha, Neb.	Arab Horse Feed.....	Salisbury.....	11.14	9.00	3.38	2.00	10.37	15.00

29037	Pioneer Ceral Co., Akron, Ohio	Corn & Oats Chop	Frederick	8.51	10.00	4.13	4.00	8.87	10.00
29104	Charles Pope, Chicago, Ill.	Dried Beet Pulp	Baltimore	8.25	8.00	1.52	1.50	18.20	20.00
29053	Quaker Oats Co., Chicago, Ill.	Green Cross Molasses Mixed Feed	Elk Mills	10.62	10.00	3.16	2.00	12.05	12.00
29038	" " " " "	Molasses Dairy Feed	Frederick	16.03	16.00	5 11	3.50	11.87	14.50
29076	" " " " "	Schumacher Calf Meal	Baltimore	20.62	19.00	9.06	8.00	2.55	3.00
24837	" " " " "	Schumacher Stock Feed	Glyndon	10.53	10.00	3.48	3.25	11.62	9.00
29044	" " " " "	Victor Feed	Monrovia	8 78	8.00	4.91	8.00	9.96	12.00
29054	" " " " "	Yellow Hominy Feed	Elk Mills	10.88	9.00	7 73	4.00	3.55	4.00
29089	Ralston Purina Co., St Louis, Mo.	Good Luck Feed, with Molasses	Baltimore	10.53	9.00	3 02	1.00	13.29	12.00
29023	" " " " "	Purina Chicken Chowder	Baltimore	19.66	17.00	5.35	3.00	8.15	9.00
29002	" " " " "	Purina Dairy Feed	Baltimore	17.72		3.95		16.47	
29007	" " " " "	XX Good Molasses Feed	Baltimore	10.62	9.00	3.38	1.50	9.85	13.00
29057	Reindollar Bros. & Co., Taneytown, Md.	Rein-O-La Chick Feed	Taneytown	9.21	9.00	3.13	3.00	1.05	3.00
29058	" " "	Rein-O-La Poultry Mash	Taneytown	12.02	12 00	2.30	3.00	2.07	4.00
29059	" " "	Rein-O-La Scratch Feed	Taneytown	9.83	9 00	3.28	2 00	2.27	3.00
29081	Ryde & Co., Chicago, Ill.	Cream Calf Meal	Baltimore	23.48	25.00	5.35	5.00	4.55	6.00
24847	Wm. G. Scarlett & Co., Baltimore, Md.	Oriole Brand H. G. Beef Scraps	Baltimore	49.40	50.00	12.60	12.00	.70	1.00
24834	" " "	Oriole Brand H. G. Dry Mash	Baltimore	19.22	20.00	5.40	4.00	9.15	9.00
29003	C. S. Schermerhorn & Son, Baltimore, Md.	Cotton Seed Meal	Baltimore	41.68		3.95		17.70	
29021	" " " "	Dried Beef Scraps	Baltimore	61.39	50.00	11.42	12 00	1.02	1.00
29027	" " " "	Old Process Oil Meal	Baltimore	34.75	31.50	5.63	7.00	8 15	10.00
290 6	" " " "	Prime Cotton Seed Meal	Baltimore	40.45	41.00	7.83	8.00	10.67	12.00
29100	M I. Shoemaker & Co., Philadelphia, Pa.	Ground Beef Scraps	Baltimore	59.23	55 00	14.31	10.00	1.25	
24838	Sherwood Distilling Co., Baltimore Md.	Dairy Food	Cockeysville	18.25	19.91	5.98	1.69	15.15	
29000	W. A. Simpson & Co. Baltimore, Md.	Champion Brand Beef Scraps	Baltimore	48 88	50.00	17.13	10.00	.65	1.00
29060	W. N. Smith Baltimore, Md.	Cotton Seed Meal	New Windsor	40.28	41.00	8.73	7.00	9.50	9.00
24848	Southern Cotton Oil Co., Charlotte. N. C.	Standard Grade Cotton Seed Meal	Baltimore	39.14	38.62	8.01	6.00	9.82	10.00

No.	Name of Manufacturer or Agent	Name of Feeding Stuffs	Place of Sampling	Protein.		Fat or Ether Extract.		Crude Fiber.	
				Found.	Guaranteed.	Found.	Guaranteed.	Found.	Guaranteed.
29026	Standard Compressed Yeast Co., Baltimore, Md.	Monumental Brand Dried Grains.....	Baltimore. ...	17.55	18.24	5.05	5.64	16.25	
29085	" " "	Monumental Brand Dried Grains..	Baltimore.....	20.71	18.24	7.15	5.64	17.37	
29088	Wm. H. Stellmann, Baltimore, Md.	G-B-S Brewers Dried Grains	Baltimore.....	28.35		7.30		11.72	
29095	" " " "	G-B-S Brewers Dried Grains	Westminster ..	28.70	29.06	7.20	6.97	12.87	12 62
24843	Stewart Distilling Co., Highlandtown, Md.	Distillers Rye Grains...	Baltimore	15.80	17 41	6.98	5.29	13.57	17.25
29092	Sugarine Co., Peoria, Ill.	Dairy Feed	Colora.....	16.76	16.50	5.80	3.50	11.85	12.00
29087	" " " "	Horse & Mule Feed.....	Baltimore	11.32	10.00	3 67	2.50	12 12	12.00
29019	Swift & Co., Newark N. J.	Digester Tankage ...	Baltimore	62.04	60.00	11.68	8.00	1.55	3 00
29103	Sylvester Oil & Fert. Co., Sylvester, Ga.	Standard Grade Cotton Seed Meal	Baltimore	40.28		10.17		7.98	
29039	Thomas & Co., Frederick Md.	Dairy Feed	Frederick	16.60	16 50	5.32	3.50	11 02	14.00
29040	D C. Timanus & Bro., Baltimore, Md., Agts.	Molassine Boston.....	Baltimore	9.25	7.00	1.43	.75	5.32	7.00
29102	Toledo Seed & Oil Co., Toledo, Ohio.	Old Process Oil Meal...	Laurel	31.33	30.00	6.84	5.00	9.30	2.00
24845	" " " " " "	Old Process Oil Meal...	Baltimore	31.50	30 00	6.48	5.00	8.77	2.00
24824	Ubiko Milling Co., Cincinnati, Ohio.	Union Grains Biles' Ready Dairy Feed....	Wash. Grove..	23.17	24.00	6.63	7.00	9.38	9.00
29098	Union Seed & Fert. Co., New York, N. Y.	American Red Tag Cotton Seed Meal....	New York.....	44.05	38.55	8.15	7.00	6.80	11.50
29099	" " " " "	Yellow Tag Choice Cotton Seed Meal....	New York.....	42.91	41.18	8.73	8.00	7.87	10.00
29068	Van Iderstine Co., Long Island City N. Y.	Darlings H. G. Protein Meat Scraps.....	Baltimore	56.07	55.00	11.38	5.00	1.31	3.00
29082	" " "	Darlings Raw Bone							

	Island City N. Y.	Meat Scraps.....	Baltimore.....	56.07	55.00	11.38	5.00	1.31	3.00
29082	" " "	Darlings Raw Bone Meal.....	Baltimore.....	23.87	20.00	3.10	3.00	1.42	
29090	Walters Milling Co., Philadelphia, Pa.	Brewers Grains.....	Sudlersville....	24.22	21.00	6.30	4.00	16.47	13.00
29052	J. M. H. Walters, Philadelphia, Pa.	Brewers Grains.....	Price Sta.....	25.27	21.00	6.26	4.00	12.47	13.00
24803	R. C. Wells & Co., Baltimore, Md.	Cotton Seed Meal.....	Baltimore.....	38.26	38.62	7.65	4.00	10.50	10.00
24825	Western Grain Products Co., Hammond, Ind.	Hammond Dairy Feed..	Gaithersburg..	16.85	16.50	5.61	3.50	11.85	11.00
29009	R. A. Wooldridge Co., Baltimore, Md.	Beef Scrap for Poultry.	Baltimore.....	59.23	55.00	12.03	10.00	.90	3.00
29091	Xtravim Molasses Feed Co., Boston, Mass.	Xtra Vim Feed.....	Baltimore. ...	5.66	4.61	1.79	.81	3.83	4.00

*"These feeds consist of ground oats hulls and refuse from an oat meal mill. They were illegally sold without having any analysis attached and the purchasers thought they were getting ground oats and of course were greatly disappointed in the results. If the analysis had been given the purchaser could have seen that the stuff was but little better than oats straw and only fit to be used as a roughage and not as a concentrate." (See page 4.)

Table II. Showing approximate average percent (pounds per hundred) of protein, fat and fiber in familiar substances.

	Protein.	Fat.	Fiber.
Meat Meal	70	12	1
Dried Blood	80	3	0
Cotton Seed Meal	40	8	7
Linseed Meal	35	7	9
Gluten Meal	32	6	2
Gluten Feed	25	3	7
Gem Oil Feed	24	9	7
Malt Sprouts	23	2	11
Dried Distillers' Grains (Corn)	30	11	11
Dried Distillers' Grains (Rye)	20	6	12
Dried Brewers' Grains	20	6	11
Wheat Middlings	17	5	5
Wheat Bran	15	4	8
Corn Bran	8	6	13
Corn Cobs	2+	0.5	30
Corn	10	5	2
Oats	12	5	10—
Wheat	12	2	2—
Barley	12	2	3
Buckwheat	10	2	9—
Cow Peas	21	1+	4
Timothy Hay	6	2.5	29
Clover Hay	12	3	25
Alfalfa	14	2	25
Cotton Seed Hulls	4	2	47
Oat Straw	4	2	37
Wheat Straw	3	1+	38
Cabbage	2+	0.4	1½
Turnips	1	0.2	1
Pumpkins	1+	0.4	2

DEFINITIONS OF FEEDING STUFFS AS ADOPTED BY THE ASSOCIATION OF FEED CONTROL OFFICIALS.

Meal is the clean, sound, ground product of the entire grain, cereal or seed which it purports to represent.

Chop is a ground or chop feed composed of one or more different cereals or by-products thereof. If it bears a name descriptive of the kind of cereals, it must be made exclusively of the entire grains of those cereals.

Screenings are the smaller imperfect grains, weed seeds and other foreign material having feeding value, separated in cleaning the grain.

Flax Plant By-Product is that portion of the flax plant remaining after the separation of the seed, the bast fiber and a portion of the shives, and consists of flax shives, flax pods, broken and immature flax seeds and the corticle tissue of the stem.

Alfalfa Meal is the entire alfalfa hay ground, and does not contain an admixture of ground alfalfa straw or other foreign materials.

Oil Meal is the ground product obtained after extraction of a part of the oil by crushing, cooking and hydraulic pressure, or by crushing, heating and the use of solvents from seeds which have been screened and cleaned of weed seeds and other foreign materials by the most improved commercial processes. When used alone the term "Oil Meal" shall be understood to designate the product obtained from screened and cleaned flaxseed. When used to cover any other product the name of the seed from which it is obtained shall be prefixed to the words "Oil Meal."

Old Process Oil Meal is the ground product obtained after extraction of part of the oil by crushing, cooking and hydraulic pressure from seeds screened and cleaned of weed seeds and other foreign materials by the most approved commercial processes. When used alone the term "Old Process Oil Meal" shall be understood to designate the product obtained from partially extracted, screened and cleaned flaxseed. When used to cover any other product the name of the seed from which it is obtained shall be prefixed to "Old Process Oil Meal."

New Process Oil Meal is the ground product obtained after extraction of part of the oil by crushing, heating and the use of solvents from seeds screened and cleaned of weed seeds and other foreign materials by the most approved commercial processes. When used alone the term "New Process Oil Meal" shall be understood to designate the product obtained from partially extracted, screened and cleaned flaxseed. When used to cover any other product the name of the seed from which it is obtained shall be prefixed to "New Process Oil Meal."

Linsed Meal is the ground product obtained after extraction of part of the oil from ground flaxseed screened and cleaned of weed seeds and other foreign materials by the most improved commercial processes.

Blood Meal is ground dried blood.

Meat Scrap and Meat Meal are the ground residues from animal tissue exclusive of hoof and horn. If they contain any considerable amount of bone, they must be designated **Meat and Bone Scrap**, or **Meat and Bone Meal.** If they bear a name descriptive of their kind, composition or origin, they must correspond thereto.

Digester Tankage is the residue from animal tissue exclusive of hoof and horn specially prepared for feeding purposes by tanking under live steam, drying under high heat, and suitable grinding. If it contains any

considerable amount of bone, it must be designated **Digester Meat and Bone Tankage.**

Cracklings are the residue after partially extracting the fats and oils from the animal tissue. If they bear a name descriptive of their kind, composition or origin, they must correspond thereto.

Brewers' Dried Grains are the properly dried residue from cereals obtained in the manufacture of beer.

Distillers' Dried Grains are the dried residue from cereals obtained in the manufacture of alcohol and distilled liquors. The product shall bear the designation indicating the cereal predominating.

Malt Sprouts are the sprouts of the barley grain. If the sprouts are derived from any other malted cereal, the source must be designated.

Buckwheat Shorts or Buckwheat Middlings are that portion of the buckwheat grain immediately inside of the hull after separation from the flour.

Rice Bran is the cuticle beneath the hull.

Rice Hulls are the outer chaffy coverings of the rice grain.

Rice Polish is the finely powdered material obtained in polishing the kernel.

Oat Groats are the kernels of the oat berry with the hulls removed.

Oat Hulls are the outer chaffy coverings of the oat grain.

Oat Middlings are the floury portion of the oat groat obtained in the milling of rolled oats.

Oat Shorts are the covering of the oat grain lying immediately inside the hull, being a fuzzy material carrying with it considerable portions of the fine floury part of the groat obtained in the milling of rolled oats.

Clipped Oat By-Product (term oat clippings not recognized) is the resultant by-product obtained in the manufacture of clipped oats. It may contain light, chaffy material broken from the ends of the hulls, empty hulls light, immature oats and dust. It must not contain an excessive amount of oat hulls.

Corn Bran is the outer coating of the corn kernel.

Corn Feed Meal is the sifting obtained in the manufacture of cracked corn and table meal made from the whole grain.

Corn Germ Meal is a product in the manufacture of starch, glucose and other corn products and is the germ layer from which a part of the corn oil has been extracted.

Grits are the hard, flinty portions of Indian corn without hulls and germ.

Hominy Meal, Hominy Feed, or Hominy Chop is a mixture of the bran coating, the germ and a part of the starchy portion of the corn kernel obtained in the manufacture of hominy grits for human consumption.

Corn Gluten Meal is that part of commercial shelled corn that remains after the separation of the larger part of the starch, the germ and the bran by the processes employed in the manufacture of corn starch and glucose. It may or may not contain corn solubles.

Corn Gluten Feed is that portion of commercial shelled corn that remains after the separation of the larger part of the starch and the germ by

the processes employed in the manufacture of corn starch and glucose. It may or may not contain corn solubles.

Cottonseed Meal is a product of the cottonseed only, composed principally of the kernel with such portion of the hull as is necessary in the manufacture of oil; provided that nothing shall be recognized as cottonseed meal that does not conform to the foregoing definition and that does not contain at least 36 percent of protein.

Choice Cottonseed Meal must be finely ground, not necessarily bolted, perfectly sound and sweet in odor, yellow, free from excess of lint, and must contain at least 41 percent of protein.

Prime Cottonseed Meal must be finely ground, not necessarily bolted, of sweet odor, reasonably bright in color, yellow, not brown or reddish, free from excess of lint, and must contain at least 38.6 percent protein.

Good Cottonseed Meal must be finely ground, not necessarily bolted, of sweet odor, reasonably bright in color and must contain at least 36 percent of protein.

Cottonseed Feed is a mixture of cottonseed meal and cottonseed hulls, containing less than 36 percent of protein.

Cold Pressed Cottonseed is the product resulting from subjecting the whole undecorticated cottonseed to the cold pressure process for the extraction of oil, and includes the entire cottonseed less the oil extracted.

Ground Cold Pressed Cottonseed is the ground product resulting from subjecting the whole undecorticated cottonseed to the cold pressure process for the extraction of oil, and includes the entire ground cottonseed less the oil extracted.

Wheat Bran is the coarse outer coatings of the wheat berry obtained in the usual commercial milling process from wheat that has been cleaned and scoured.

Shorts or Standard Middlings are the fine particles of the outer and inner bran separated from bran and white middlings.

Wheat White Middlings or White Middlings are that part of the offal of wheat intermediate between shorts or standard middlings and red dog.

Shipstuff or Wheat Mixed Feed is a mixture of the products other than the flour obtained from the milling of the wheat berry.

Red Dog is a low grade wheat flour containing the finer particles of bran.

Wheat Bran with Mill Run Screenings is pure wheat bran plus the screenings which were separated from the wheat used in preparing said bran.

Wheat Bran with Screenings not Exceeding Mill Run is either wheat bran with the whole mill run of screenings or wheat bran with a portion of the mill run of screenings, provided that such portion is not an inferior portion thereof.

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